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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,766	06/27/2006	Allan L. Goldstein	2600-116	9880
6449	7590	12/06/2007		
ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 , WASHINGTON, DC 20005			EXAMINER LUKTON, DAVID	
			ART UNIT 1654	PAPER NUMBER
			NOTIFICATION DATE 12/06/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

Office Action Summary

Application No.

10/564,766

Applicant(s)

GOLDSTEIN, ALLAN L.

Examiner

David Lukton

Art Unit

1654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 7, 8, 10, 12 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9, 11 and 14-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Applicants' election (response filed 9/28/07) is acknowledged. The various elections are now as follows:

- a) in the elected method, G1 (only) is administered, and not G2 or G3 or G4;
- b) the "form" of the composition is an injectable carrier;
- c) the "route" of administration, is by i.v. injection;
- d) protection is sought for any type of stem cell, provided that the stem cells are not in blood or bone marrow or the GI tract.
- e) in the elected method, radiation is indeed administered to a target area;
- f) the elected composition is thymosin beta-4 in water;

In accordance with the foregoing, claims 7, 8, 10, 19, 12 are withdrawn from consideration.

Claims 1-6, 9, 11, 14-17 are examined in this Office action.



This application contains at least three sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR § 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR §§ 1.821 through 1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures.

Applicant is given the time period set in this letter within which to comply with the sequence rules 37 CFR §§ 1.821 - 1.825. Failure to comply with these requirements will result in ABANDONMENT of the application under 37 CFR §1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR § 1.136. In no case may an applicant extend the period for response beyond the six month statutory period.



The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-6, 9, 11, 14-17 are rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Applicants have asserted that "damage" due to radiation exposure can be treated using peptides that contain the LKKTET subsequence. However, there is no evidence that this is the case. Selecting compounds at random, and attributing randomly selected properties to them, tends to produce "unpredictable" results.

As stated in *Ex parte Forman* (230 USPQ 546, 1986) and *In re Wands* (8 USPQ2d 1400, Fed. Cir., 1988) the factors to consider in evaluating the need (or absence of need) for "undue experimentation" are the following: quantity of experimentation necessary, amount

of direction or guidance presented, presence or absence of working examples, nature of the invention, state of the prior art, relative skill of those in that art, predictability or unpredictability of the art, and breadth of the claims.

And even if, at some point in the future, applicants could demonstrate that healing of damaged tissue can be accelerated by administration of a LKKTET-containing peptide, the rejection would still be maintained insofar as “prevention” is being asserted. Demonstration of “prevention” is a much higher standard to demonstrate. For example, if each of 100 rats were injected with LKKTET, and subjected to radiation, with the result that 99% of them exhibited no damaged tissue of any kind, this result would actually constitute evidence that prevention had not been achieved, as long as one of those 100 rats exhibited some sort of untoward effect as a result of the radiation exposure. Thus, even compelling evidence in support of treatment (if applicants are able to present such) is unlikely to make the case for prevention.

A matter somewhat unrelated to the foregoing concerns another embodiment in claim 1. Suppose, for purposes of discussion, that applicants can show that actin sequestering agents, and anti-inflammatory agents are effective to promote healing of tissue that has been damaged by radiation. What claim 1 encompasses is not actin-sequestering agents *per se*, or anti-inflammatory agents *per se*, but compounds that “include” these agents. In other words, applicants are claiming the use of conjugates of actin-sequestering agents, and anti-

inflammatory agents, i.e., a compound which is obtained by coupling a "first compound" with a "second compound", wherein the "first compound" is the actin-sequestering agent or the anti-inflammatory agent, and the "second compound" is something else, such as an acyl group, or perhaps a PEG molecule, or perhaps a peptide carrier. The point here is that when one takes a compound that exhibits a given pharmacological activity, and attaches another compound to it, loss of activity frequently results.

Accordingly, "undue experimentation" would be required to practice the claimed invention.



Claims 1 and 15 are rejected under 35 U.S.C. §112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 1 is drawn, in one embodiment, to a method of **preventing** damage by administering (the compound) to a subject who is in need of "such treatment". For the skilled medical practitioner who is endeavoring to prevent damage, rather than treat damaged tissue, what exactly does this mean? Does this mean that the medical practitioner will only succeed in treatment (not prevention)...?
- Claim 15 encompasses a method of treating a subject who is suffering from damaged tissue, which damage is the result of exposure to radiation. Yet, in one embodiment, the subject has not yet been exposed to radiation. How, in applicants opinion, does a subject who has never been exposed to radiation suffer damage from radiation? It is suggested that claim 15 be cast in independent form.



The following is a quotation of 35 USC. §103 which forms the basis for all obviousness rejections set forth in the Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claim 1 is rejected under 35 U.S.C. §103 as being unpatentable over Rudolph (US 20060166877).

Rudolph discloses the use of thymosin for treating or preventing radiation damage.

Thus, the claim is rendered obvious.



Claim 1 is rejected under 35 U.S.C. §103 as being unpatentable over Greenberger (USP 5,599,712).

Greenberger discloses a method of protection from radiation damage. The method calls for administering a polynucleotide which encodes a protein, which protein provides the requisite protection. One or more of the proteins could qualify as an “anti inflammatory” agent within the meaning of instant claim 1.

Thus, the claim is rendered obvious.



Claim 1 is rejected under 35 U.S.C. §103 as being unpatentable over Barcellos-Hoff (USP 5,616,561).

Barcellos-Hoff discloses a method of protection from radiation damage. The method calls for administering a TGF-*beta* antagonist. Such an antagonist could qualify as an “antagonist” of “said compound” (instant claim 1) or an “agent which regulates said compound” (instant claim 1).

Thus, the claim is rendered obvious.



Claim 1 is rejected under 35 U.S.C. §103 as being unpatentable over Rogers (USP 7173011).

Rogers discloses methods for treating radiation damage. One or more of the compounds disclosed would fall within the scope of instant claim 1.

Thus, the claim is rendered obvious.



Claims 1-6, 9, 11, 14-17 are rejected under 35 U.S.C. §103 as being unpatentable over Kleinman (US 2007/0111931).

Kleinman discloses that thymosin *beta* 4 is effective to promote wound healing. One of ordinary skill would therefore expect that if tissue had been wounded by radiation (or some other cause) benefit would accrue by administering the thymosin.

Thus, the claims are rendered obvious.



Claims 1-3 are rejected under 35 U.S.C. §103 as being unpatentable over Vavrova
(*Lymphology* 12(4), 275-279, 1979).

Vavrova discloses that thymosin is effective to treat damage resulting from radiation

Thus, the claims are rendered obvious.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lukton whose telephone number is 571-272-0952. The examiner can normally be reached Monday-Friday from 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang, can be reached at (571)272-0562. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.



DAVID LUKTON, PH.D.
PRIMARY EXAMINER

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Applicant must file the items indicated below within the time period set the Office action to which the Notice is attached to avoid abandonment under 35 U.S.C. § 133 (extensions of time may be obtained under the provisions of 37 CFR 1.136(a)).

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998).
2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."
5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
6. The paper copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
7. Other:

Applicant Must Provide:

An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".

An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.

A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g).

For questions regarding compliance to these requirements, please contact:

- For Rules Interpretation, call (703) 308-4216 or (703) 308-2923
- For CRF Submission Help, call (703) 308-4212
- For PatentIn software Program Support:
 - HELP DESK: (703) 739-8559, ext 508, M-F, 8 AM to 5 PM EST except holidays
 - Email: PATIN21HELP@uspto.gov
 - To purchase PatentIn software: (703) 306-2600

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